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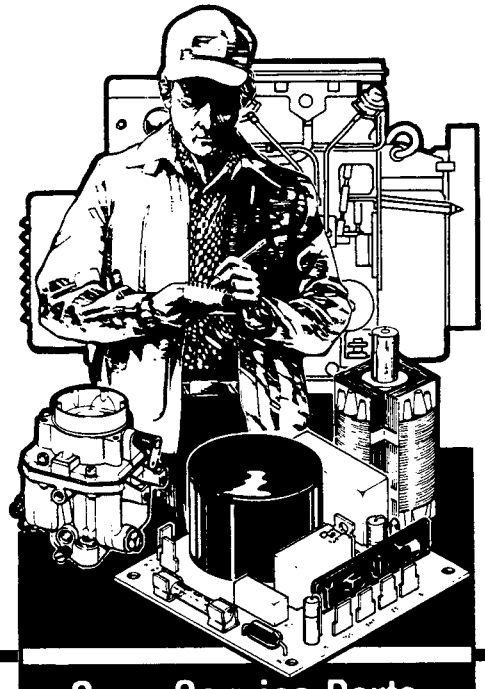
Onan

Parts Manual

6.3

NHL-RV

GenSet

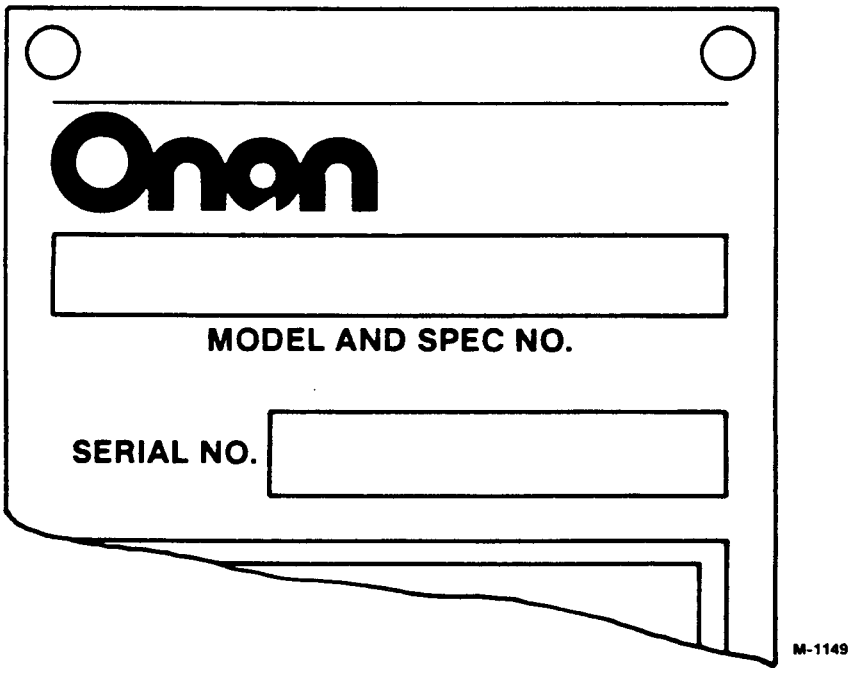


Onan Service Parts

940-0225
4-86 (Spec P)
Replaces 6-83 (Spec P)
Printed in U.S.A.

For parts or service, contact the dealer from whom you purchased this equipment or refer to your Nearest Authorized Onan Parts and Service Center.

To avoid errors or delay in filling your parts order, always give the MODEL, SPEC NO. and SERIAL NO. from the Onan nameplate.



For handy reference, insert "YOUR" nameplate information in the spaces above.

Important Safety Precautions

Read and observe these safety precautions when using or working on electric generators, engines and related equipment. Also read and follow the literature provided with the equipment.

Proper operation and maintenance are critical to performance and safety. Electricity, fuel, exhaust, moving parts and batteries present hazards that can cause severe personal injury or death.

FUEL, ENGINE OIL, AND FUMES ARE FLAMMABLE AND TOXIC

Fire, explosion, and personal injury can result from improper practices.

- Used engine oil, and benzene and lead, found in some gasoline, have been identified by government agencies as causing cancer or reproductive toxicity. When checking, draining or adding fuel or oil, do not ingest, breathe the fumes, or contact gasoline or used oil.
- Do not fill tanks with engine running. Do not smoke around the area. Wipe up oil or fuel spills. Do not leave rags in engine compartment or on equipment. Keep this and surrounding area clean.
- Inspect fuel system before each operation and periodically while running.
- Equip fuel supply with a positive fuel shutoff.
- Do not store or transport equipment with fuel in tank.
- Keep an ABC–rated fire extinguisher available near equipment and adjacent areas for use on all types of fires except alcohol.
- Unless provided with equipment or noted otherwise in installation manual, fuel lines must be copper or steel, secured, free of leaks and separated or shielded from electrical wiring.
- Use approved, non-conductive flexible fuel hose for fuel connections. Do not use copper tubing as a flexible connection. It will work–harden and break.

EXHAUST GAS IS DEADLY

- Engine exhaust contains carbon monoxide (CO), an odorless, invisible, poisonous gas. Learn the symptoms of CO poisoning.
- Never sleep in a vessel, vehicle, or room with a genset or engine running unless the area is equipped with an operating CO detector with an audible alarm.
- Each time the engine or genset is started, or at least every day, thoroughly inspect the exhaust system. Shut down the unit and repair leaks immediately.
- Warning: Engine exhaust is known to the State of California to cause cancer, birth defects and other reproductive harm.

Make sure exhaust is properly ventilated.

- Vessel bilge must have an operating power exhaust.
- Vehicle exhaust system must extend beyond vehicle perimeter and not near windows, doors or vents.
- Do not use engine or genset cooling air to heat an area.
- Do not operate engine/genset in enclosed area without ample fresh air ventilation.
- Expel exhaust away from enclosed, sheltered, or occupied areas.
- Make sure exhaust system components are securely fastened and not warped.

MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not remove any guards or covers with the equipment running.
- Keep hands, clothing, hair, and jewelry away from moving parts.
- Before performing any maintenance, disconnect battery (negative [–] cable first) to prevent accidental starting.
- Make sure fasteners and joints are secure. Tighten supports and clamps, keep guards in position over fans, drive belts, etc.
- If adjustments must be made while equipment is running, use extreme caution around hot manifolds and moving parts, etc. Wear safety glasses and protective clothing.

BATTERY GAS IS EXPLOSIVE

- Wear safety glasses and do not smoke while servicing batteries.
- Always disconnect battery negative (–) lead first and reconnect it last. Make sure you connect battery correctly. A direct short across battery terminals can cause an explosion. Do not smoke while servicing batteries. Hydrogen gas given off during charging is explosive.
- Do not disconnect or connect battery cables if fuel vapors are present. Ventilate the area thoroughly.

DO NOT OPERATE IN FLAMMABLE AND EXPLOSIVE ENVIRONMENTS

Flammable vapor can be ignited by equipment operation or cause a diesel engine to overspeed and become difficult to stop, resulting in possible fire, explosion, severe personal injury and death. **Do not operate diesel equipment where a flammable vapor environment can be created by fuel spill, leak, etc., unless equipped with an automatic safety device to block the air intake and stop the engine.**

HOT COOLANT CAN CAUSE SEVERE PERSONAL INJURY

- Hot coolant is under pressure. Do not loosen the coolant pressure cap while the engine is hot. Let the engine cool before opening the pressure cap.

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not service control panel or engine with unit running. High voltages are present. Work that must be done while unit is running should be done only by qualified service personnel.
- Do not connect the generator set to the public utility or to any other electrical power system. Electrocution can occur at a remote site where line or equipment repairs are being made. An approved transfer switch must be used if more than one power source is connected.
- Disconnect starting battery (negative [–] cable first) before removing protective shields or touching electrical equipment. Use insulative mats placed on dry wood platforms. Do not wear jewelry, damp clothing or allow skin surface to be damp when handling electrical equipment.
- Use insulated tools. Do not tamper with interlocks.
- Follow all applicable state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag open switches to avoid accidental closure.
- With transfer switches, keep cabinet closed and locked. Only authorized personnel should have cabinet or operational keys. Due to serious shock hazard from high voltages within cabinet, all service and adjustments must be performed by an electrician or authorized service representative.

If the cabinet must be opened for any reason:

1. Move genset operation switch or Stop/Auto/Handcrank switch (whichever applies) to Stop.
2. Disconnect genset batteries (negative [–] lead first).
3. Remove AC power to automatic transfer switch. If instructions require otherwise, use extreme caution due to shock hazard.

MEDIUM VOLTAGE GENERATOR SETS (601V TO 15kV)

- Medium voltage acts differently than low voltage. Special equipment and training are required to work on or around medium voltage equipment. Operation and maintenance must be done only by persons trained and qualified to work on such devices. Improper use or procedures will result in severe personal injury or death.
- Do not work on energized equipment. Unauthorized personnel must not be permitted near energized equipment. Induced voltage remains even after equipment is disconnected from the power source. Plan maintenance with authorized personnel so equipment can be de-energized and safely grounded.

GENERAL SAFETY PRECAUTIONS

- Do not work on equipment when mentally or physically fatigued or after consuming alcohol or drugs.
- Carefully follow all applicable local, state and federal codes.
- Never step on equipment (as when entering or leaving the engine compartment). It can stress and break unit components, possibly resulting in dangerous operating conditions from leaking fuel, leaking exhaust fumes, etc.
- Keep equipment and area clean. Oil, grease, dirt, or stowed gear can cause fire or damage equipment by restricting airflow.
- Equipment owners and operators are solely responsible for operating equipment safely. Contact your authorized Onan/Cummins dealer or distributor for more information.

KEEP THIS DOCUMENT NEAR EQUIPMENT FOR EASY REFERENCE.

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INTRODUCTION

This Catalog applies to the Standard NHL Recreational Vehicle Generator Set. Parts are arranged in groups of related items. Each illustrated part is identified by a reference number corresponding to the same reference number in the parts list for that group. Parts illustrations are typical. Using the *Model* and *Spec No.* from the nameplate, select parts from this Catalog that apply to your set. Unless otherwise mentioned in the description, parts are interchangeable between models. Right and left sides are determined by *facing* the engine end (front) of the set.

GENERATOR SET DATA TABLE

MODEL AND SPEC NO.	TYPE	WATTS	VOLTS	HERTZ	WIRE	PHASE
6.3 NHL-3 CR/16013P	Remote	6300	120/240	60	**	Single

**-Set is reconnectible for 120 volt, 2 wire; 240 volt, 2 wire; or 120/240 volt, 3 wire service.

NOTE: The letter R in the Model and Spec denotes Electric Start with Start-Stop at both the Set and the Remote Control.

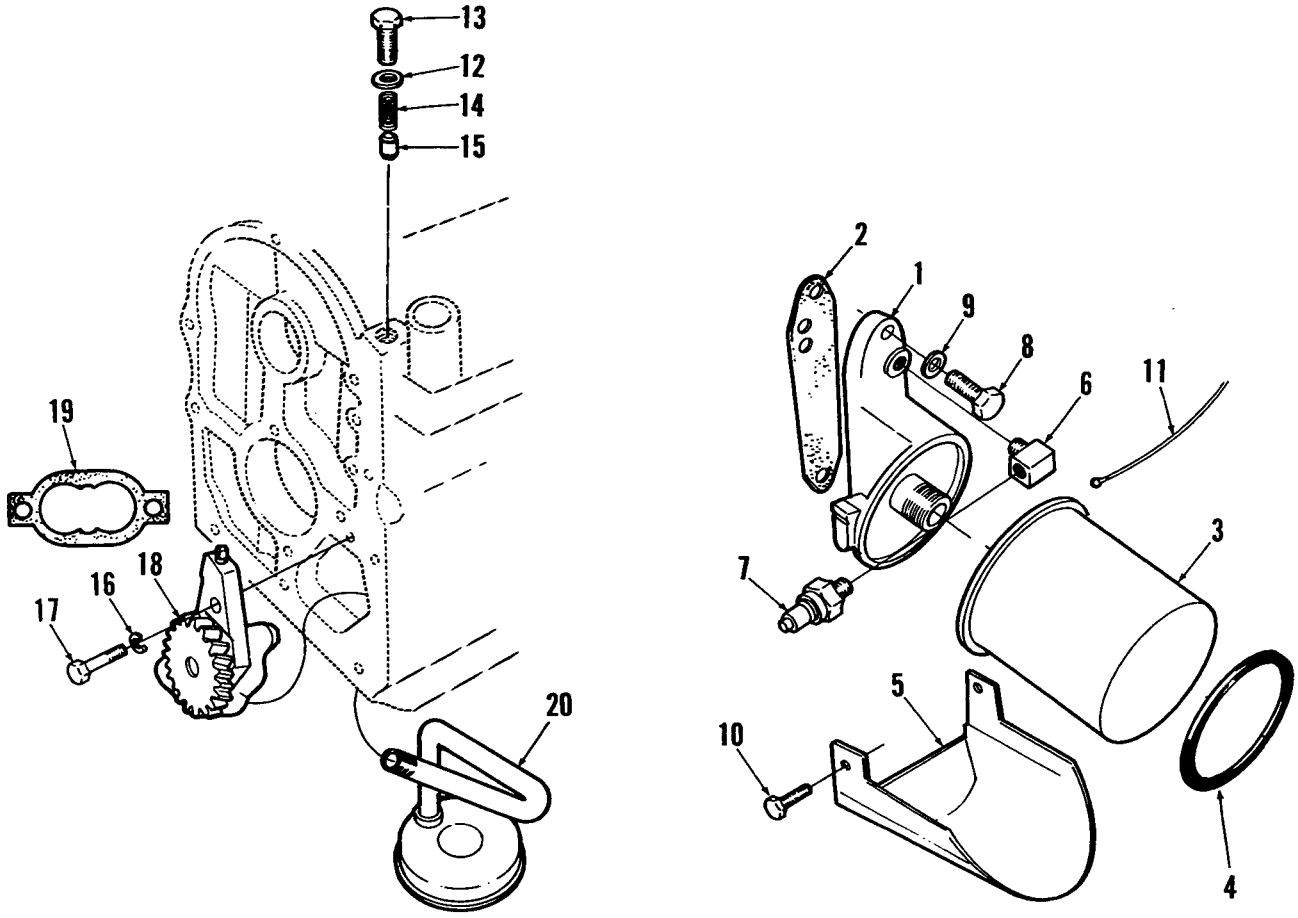
STANDARD PARTS SECTION

This section contains the illustrated parts listing for the standard generator sets listed in the Data Table.

NOTICE!

ITEMS REFERENCED AS **OPTIONAL** INDICATE PART IS FACTORY INSTALLED AND MAY NOT BE APPLICABLE TO ALL MODELS. FOR FIELD CONVERSIONS ADDITIONAL PARTS ARE USUALLY REQUIRED.

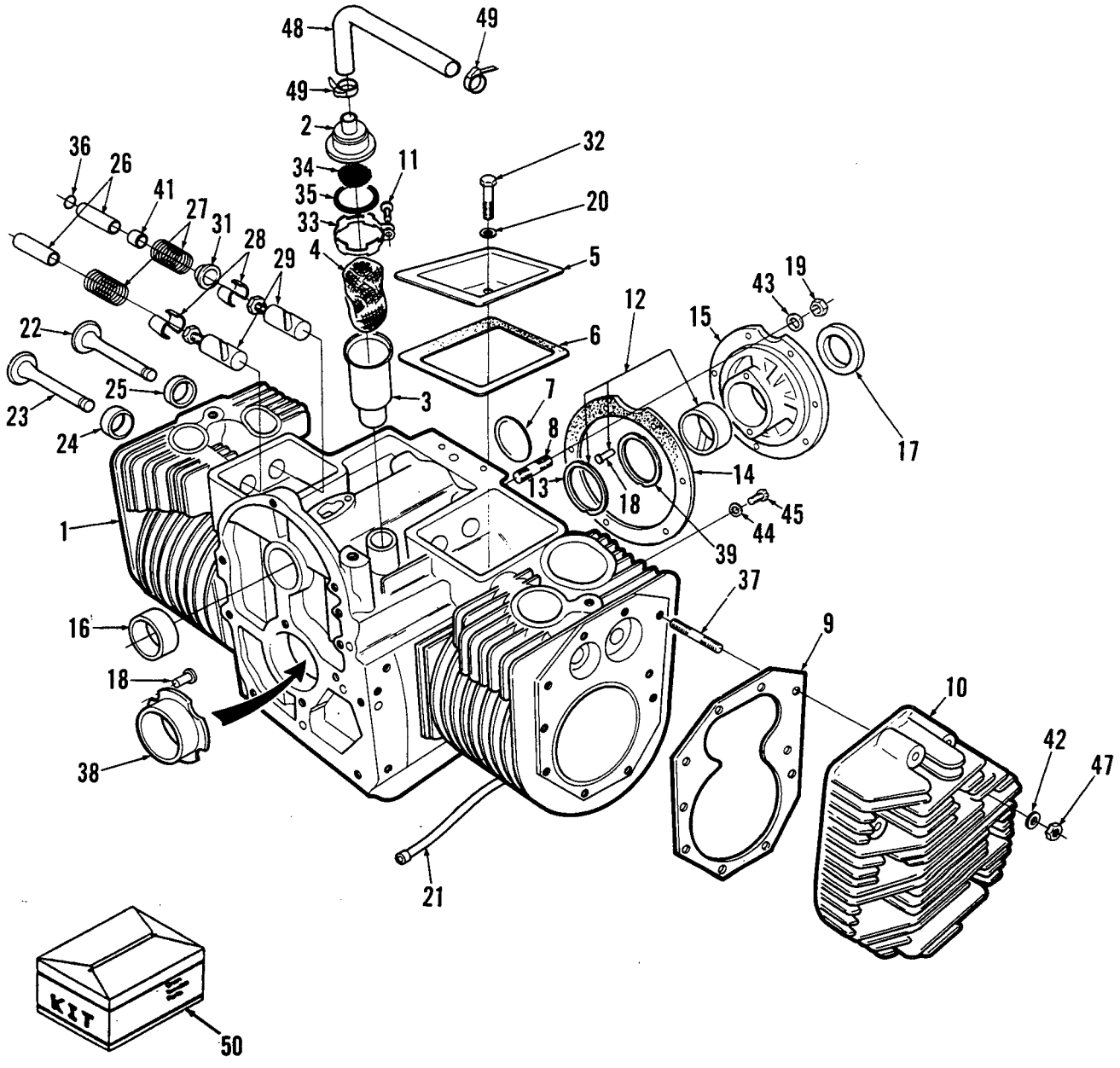
Oil System



LS 1120

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	122-0320	1	Adapter, Oil Filter
2	122-0321	1	Gasket, Oil Filter Adapter Mounting
3	122-0323	1	Filter, Oil - Spin-on
4	122-0347	1	Seal, Air - Oil Filter
5	122-0360	1	Drain, Oil Filter
6	502-0053	1	Elbow, Street - 45°
7	309-0322	1	Switch, Low Oil Pressure
8	800-0028	2	Screw, Cap - Hex Head (5/16-18 x 1")
9	526-0065	2	Washer, Flat - Copper (21/64"ID x 9/16"OD x 1/16")
10	815-0194	2	Screw, Tapping - Hex Head (#10-32 x 3/8")
11	336-3377	1	Lead, Electrical - Low Oil Pressure Switch
12	526-0066	1	Washer, Flat - Copper (25/64" ID x 9/16" OD x 1/16" THK)
13	801-0050	1	Screw, Cap - Hex Head (3/8-24 x 1")
14	120-0140	1	Spring, Oil By-Pass Valve
15	120-0398	1	Valve, Oil By-Pass
16	850-0040	2	Washer, Lock - Spring (1/4")
17	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
18	120-0491	1	Pump, Oil (Components Not Sold Separately)
19	120-0161	1	Kit, Gasket - Oil Pump
20	120-0413	1	Cup, Oil Pump Intake - (Includes Screw Pipe and Cup)

Cylinder Block



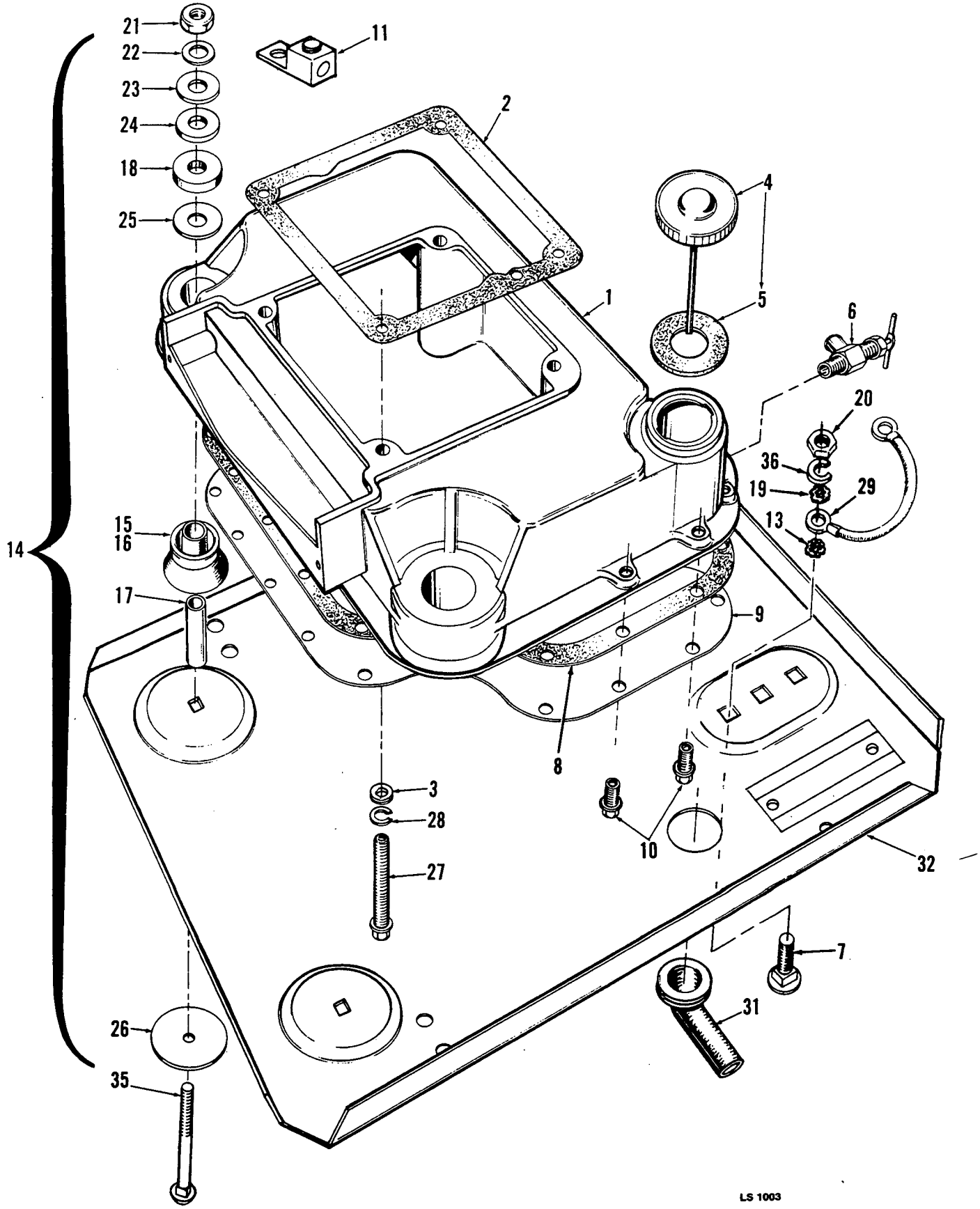
XC 1094

Cylinder Block

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	110-2340	1	Block Assembly, Cylinder (Includes Parts Marked*)
2	123-0954	1	Cap and Valve, Breather
3	123-0952	1	*Tube, Breather
4	123-1417	1	Filter, Breather Tube
5	110-1624	2	Cover, Valve
6	110-1720	2	Gasket, Valve Cover Mounting
7	517-0048	1	*Plug, Expansion
8	520-0736	5	*Stud, Bearing Plate Mounting
9	110-2987	2	Gasket, Cylinder Head Mounting
10	110-2713	2	Head, Cylinder-Left and Right Side
11	809-0035	1	Screw, Tapping-Round Head (#8 x 3/4" Lg)
12	BEARING, CRANKSHAFT REAR		
	101-0450	1	*Standard
	101-0450-02	1	.002" Undersize
	101-0450-10	1	.010" Undersize
	101-0450-20	1	.020" Undersize
	101-0450-30	1	.030" Undersize
13	104-0575	2	*Washer, Thrust-Crankshaft Bearing
14	101-0415	1	*Gasket, Bearing Plate
15	101-0439	1	*Plate, Bearing-Rear
16	101-0405	2	*Bearing, Camshaft
17	509-0041	1	*Seal, Oil-Crankshaft
18	516-0072	4	*Pin, Bearing Stop
19	104-0091	5	*Nut, Hex (3/8-24)
20	526-0063	2	Washer, Flat (Copper)-(17/64"ID x 7/16"OD x 1/32"Thk)
21	120-0680	1	*Tube, Oil-Crankcase
22	110-1718	2	Valve, Intake
23	110-1719	2	Valve, Exhaust
24	INSERT, VALVE SEAT—EXHAUST		
	110-1716	2	*Standard
	110-1716-02	2	.002" Oversize
	110-1716-05	2	.005" Oversize
	110-1716-10	2	.010" Oversize
	110-1716-25	2	.025" Oversize
25	INSERT, VALVE SEAT—INTAKE		
	110-1933	2	*Standard
	110-1933-02	2	.002" Oversize
	110-1933-05	2	.005" Oversize
	110-1933-10	2	.010" Oversize
	110-1933-25	2	.025" Oversize
26	*GUIDE, VALVE		
	110-3167	2	Exhaust
	110-3168	2	Intake
27	110-0539	4	Spring, Valve
28	110-0639	8	Lock, Valve Spring
29	TAPPET, VALVE		
	115-0006	4	Standard
	115-0006-05	4	.005" Oversize
31	110-0893	4	Retainer, Valve Spring
32	800-0011	2	Screw, Cap-Hex Head (1/4-20 x 2"Lg)
33	123-0951	1	Clamp, Loop-Breather Tube Cap
34	123-0958	2	Screen, Breather Tube
35	509-0117	1	Seal, "O" Ring-Breather Tube
36	110-0068	2	*Gasket, Valve Guide-Intake
37	STUD, CYLINDER HEAD MOUNTING		
	520-0876	4	2 Top Holes (3/8 x 2-3/4" Lg)
	520-0918	8	4 Middle Holes (3/8 x 3" Lg)
	520-0919	8	4 Bottom Holes (3/8 x 2-19/32" Lg)
38	BEARING, SLEEVE-FLANGED CRANKSHAFT		
	101-0432	1	*Standard
	101-0432-02	1	.002" Undersize
	101-0432-10	1	.010" Undersize
	101-0432-20	1	.020" Undersize
	101-0432-30	1	.030" Undersize
39	104-0776	As Req.	*Shim, Crankshaft Thrust
41	509-0168	2	*Seal, Intake Valve
42	WASHER		
	526-0250	20	Flat (13/32"ID x 1"OD x 1/8"Thk)
	851-0029	24	Compression (3/8"ID x 1-1/16"OD)
43	526-0251	5	*Washer, Flat (.406"ID x .688"OD x .1345"Thk)
44	526-0066	2	*Washer, Flat (Copper)-(25/64"ID x 9/16"OD x 1/16"Thk)
45	800-0046	2	*Screw, Cap-Hex Head (3/8-16 x 1/2" Lg)
47	104-0091	20	Nut, Hex (3/8-24)
48	503-0857	1	Tube, Breather
49	503-0770	2	Clamp, Breather Tube
50	KIT GASKET		
	168-0168	1	Carbon Removal
	168-0169	1	Engine

*-Parts Included in 110-2340 Cylinder Block Assembly.

Oil Base and Mounting Hardware

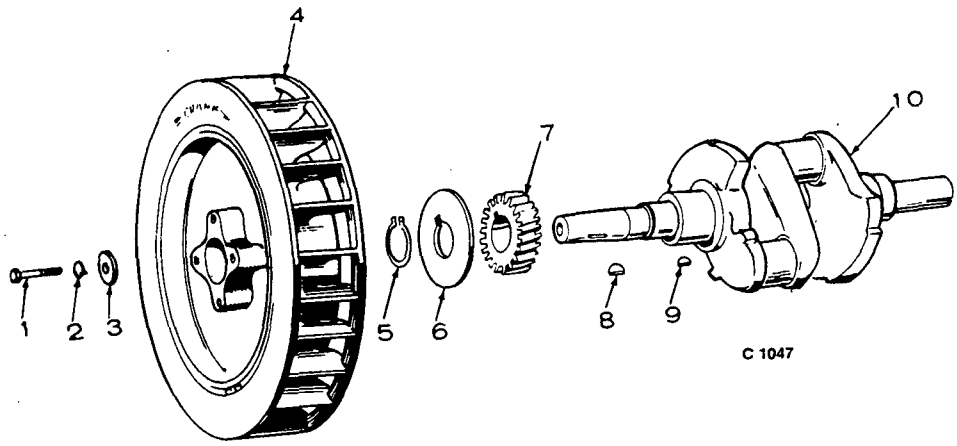


Oil Base and Mounting Hardware

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	102-0957	1	Base, Oil (Includes Parts Marked*)
2	102-1200	1	*Gasket, Oil Base
3	526-0030	4	Washer, Flat (13/32" ID x 7/8"OD x 1/8"Thk)
4	123-1400	1	Cap and Indicator, Oil Fill
5	123-0191	1	Gasket, Oil Fill Cap
6	504-0092	1	Valve, Oil Drain
7	816-0197	1	Bolt, Carriage (7/16-14 x 1-1/4")
8	102-1275	1	*Gasket, Oil Pan Mounting
9	102-0889	1	*Pan, Oil Base
10	821-0018	20	*Screw, Cap-HWH (1/4-20 x 5/8")
11	332-0142	1	Terminal, Solderless-Ground
13	856-0016	1	Washer, Lock-EIT (5/8")
14	PACKAGE, HARDWARE MOUNTING (Includes Parts Marked #)		
	402-0477	1	Engine End
	402-0478	1	Generator End (Left Side)
	402-0480	1	Generator End (Right Side)
15	402-0283	2	Cushion, Vibration-Engine End
16	#CUSHION, VIBRATION-GENERATOR END		
	402-0283	1	Left Side
	402-0283	1	Right Side
17	#SPACER, SLEEVE		
	402-0290	2	Engine End
	402-0290	1	Generator End (Left Side)
	402-0290	1	Generator End (Right Side)
18	#SNUBBER		
	402-0282	2	Engine End
	402-0282	1	Generator End (Left Side)
	402-0282	1	Generator End (Right Side)
19	856-0012	1	Washer, Lock-EIT (7/16")
20	862-0004	1	Nut, Hex (7/16" - 14)
21	#NUT, HEX (7/16" - 14)		
	862-0004	2	Engine End
	862-0004	1	Generator End (Left Side)
	862-0004	1	Generator End (Right Side)
22	#WASHER, LOCK (7/16")		
	850-0055	2	Engine End
	850-0055	1	Generator End (Right Side)
	856-0012	1	(EIT) Generator End (Left Side)
23	#WASHER, FLAT (29/64"ID x 1-1/2OD x 1/8"Thk)		
	526-0014	2	Engine End
	526-0014	1	Generator End (Left Side)
	526-0014	1	Generator End (Right Side)
24	#WASHER, FLAT (5/8"ID x 1-1/2"OD x 1/16"Thk)		
	526-0198	4	Engine End
	526-0198	1	Generator End (Left Side)
	526-0198	1	Generator End (Right Side)
25	#WASHER, FLAT		
	526-0286	2	Generator End (Left Side)
	526-0286	1	Generator End (Right Side)
26	856-0016	1	#Washer, Lock-EIT (5/8")-Right Side Generator End-Left Side
27	800-0064	4	Screw, Cap - Hex Head (3/8-16 x 4-1/2")
28	850-0050	4	Washer, Lock-Spring (3/8")
29	337-2055	1	Strap, Ground
31	122-0345	1	Hose, Oil Drain-Optional
32	403-2092	1	Plate, Mounting
35	#BOLT, CARRIAGE (7/16-14 x 3-1/2")		
	816-0206	2	Engine End
	816-0206	1	Generator End (Left Side)
	816-0206	1	Generator End (Right Side)
36	850-0055	1	Washer, Lock (7/16")

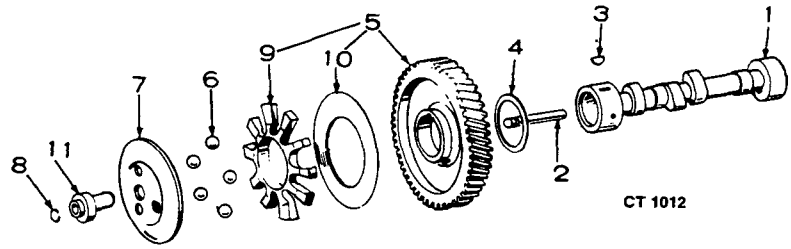
*-Parts Included in 102-0957 Oil Base
#-Parts Included in Hardware Mounting Package

Crankshaft and Flywheel



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	104-0170	1	Screw Cap - Hex Head (7/16-14 x 4"Lg)
2	850-0055	1	Washer, Lock - Spring (7/16")
3	526-0262	1	Washer, Flat (15/32"ID x 1-1/4"OD x 1/4"Thk)
4	134-4245	1	Flywheel
5	518-0014	1	Ring, Retaining
6	104-0043	1	Washer, Gear
7	104-0032	1	Gear, Crankshaft
8	515-0227	1	Kit, Key
9	515-0001	1	Key, Woodruff
10	104-1314	1	Crankshaft

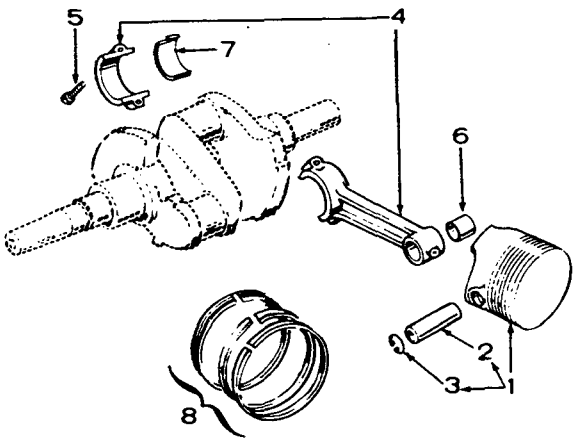
Camshaft



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	105-0396	1	Camshaft (Includes Center Pin)
2	150-0075	1	Pin, Camshaft
3	515-0001	1	Key, Camshaft Gear
4	105-0541	1	Washer, Thrust
5	105-0332	1	Gear Assembly, Camshaft (Includes Parts Marked *)
6	510-0015	10	Ball, Fly - Governor
7	150-1520	1	Cup, Governor
8	150-0078	1	Ring, Retaining
9	150-1510	1	*Spacer, Flyball
10	150-0077	1	*Plate, Flyball
11	150-1519	1	Hub, Governor Cup

* - Parts Included in the 105-0332 Camshaft Gear Assembly.

Piston and Rod

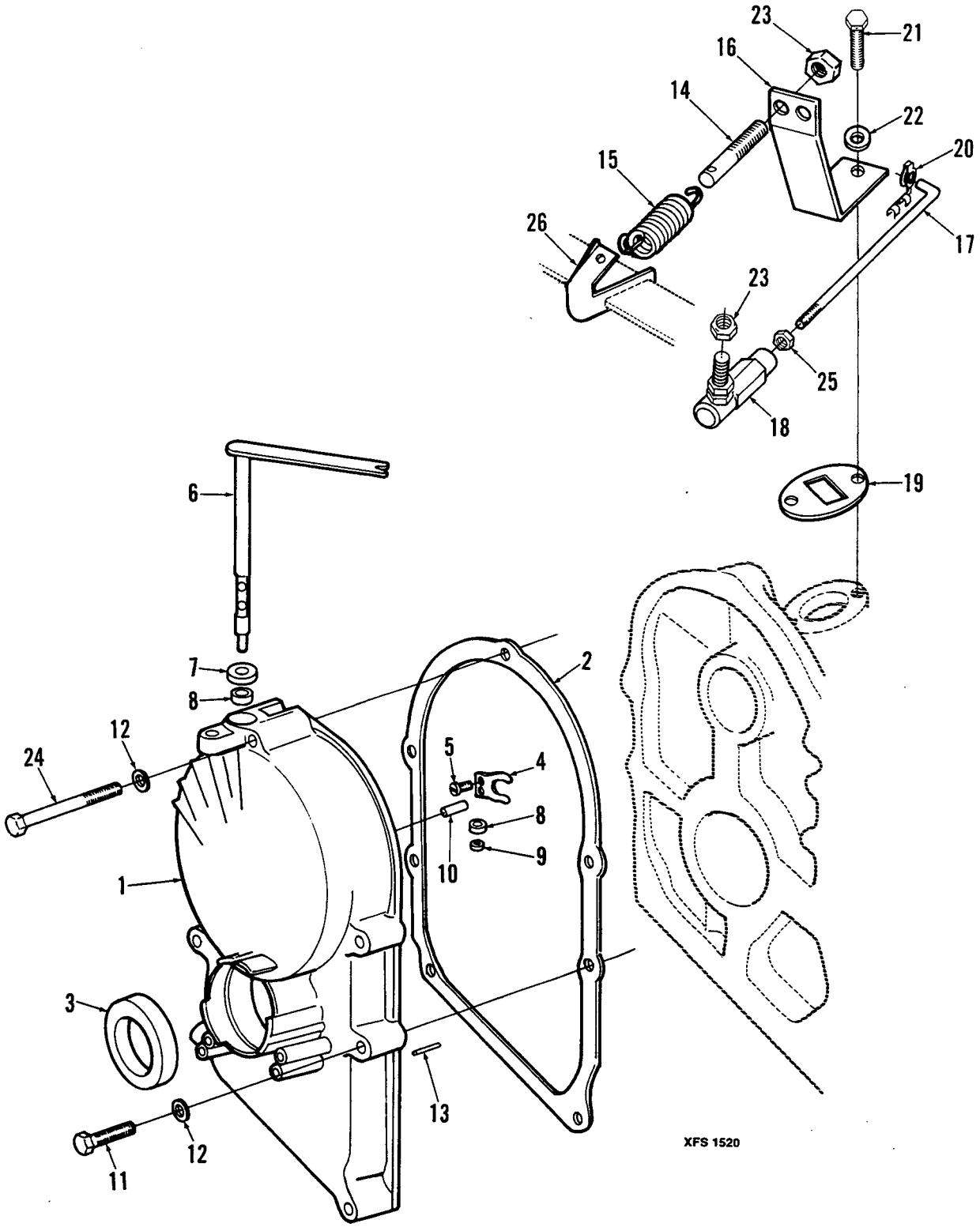


CT 1013

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PISTON AND PIN (Includes Retaining Rings)		
	112-0228	2	Standard
	112-0228-05	2	.005" Oversize
	112-0228-10	2	.010" Oversize
	112-0228-20	2	.020" Oversize
	112-0228-30	2	.030" Oversize
	112-0228-40	2	.040" Oversize
2	112-0112	2	Pin, Piston
3	518-0294	4	Ring, Retaining - Piston Pin
4	114-0203	2	Rod Assembly, Connecting
5	805-0010	4	Bolt, Place
6	114-0036	2	Bushing, Piston Pin

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	BEARING, HALF-CONNECTING ROD		
	114-0188	4	Standard
	114-0188-02	4	.002" Undersize
	114-0188-10	4	.010" Undersize
	114-0188-20	4	.020" Undersize
	114-0188-30	4	.030" Undersize
8	RING SET, PISTON		
	113-0203	2	Standard
	113-0203-05	2	.005" Oversize
	113-0203-10	2	.010" Oversize
	113-0203-20	2	.020" Oversize
	113-0203-30	2	.030" Oversize
	113-0203-40	2	.040" Oversize

Gearcase and Governor

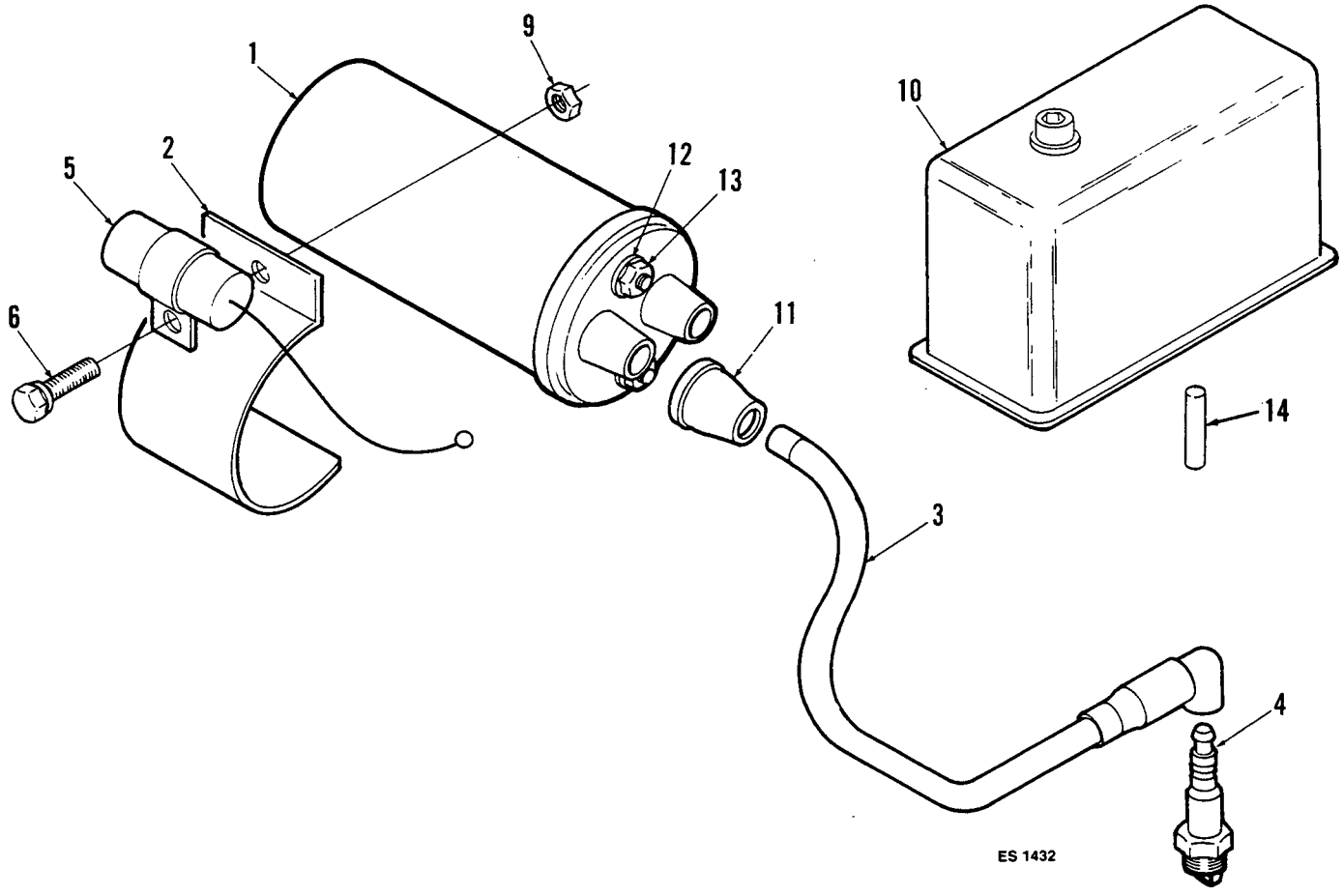


Gearcase and Governor

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	103-0667	1	Cover Assembly, Gear (Includes Parts Marked *)
2	103-0408	1	Gasket, Gearcase Mounting
3	509-0040	1	*Seal, Oil
4	150-1187	1	*Yoke, Governor
5	815-0046	2	*Screw, Machine - Pan Head (#8-32 x 3/8"Lg)
6	150-1542	1	*Arm and Shaft Assembly, Governor
7	509-0008	1	*Seal, Oil
8	510-0013	2	*Bearing, Needle
9	510-0014	1	*Bearing, Ball - Governor Shaft
10	516-0130	1	*Pin, Governor Cup Stop
11	800-0032	4	Screw, Cap - Hex Head Gearcase Mounting (5/16-18 x 1-3/4"Lg)
12	526-0065	6	Washer, Flat (Copper) Gearcase Mounting (21/64"ID x 9/16"OD x 1/16"Thk)
13	516-0141	2	Pin, Gearcase Alignment
14	150-0096	1	Stud, Speed Adjustment
15	150-1612	1	Spring, Governor
16	150-1577	1	Bracket, Governor Mounting
17	150-0629	1	Rod, Governor Arm to Carburetor
18	150-0639	1	Ball, Joint
19	149-0003	1	Gasket, Governor Bracket Mounting
20	518-0004	1	Clip, Retaining - Rod End
21	800-0004	2	Screw, Cap - Hex Head Governor Bracket Mounting (1/4-20 x 5/8"Lg)
22	526-0063	2	Washer, Flat (Copper) Governor Bracket Mounting (17/64"ID x 7/16"OD x 1/32"Thk)
23	870-0131	1	Nut, Self-Locking (1/4-20)
24	800-0034	1	Screw, Cap - Hex Head Gearcase Mtg. (5/16-18 x 2-1/4"Lg)
25	870-0053	1	Nut, Hex (#10-32)
26	150-0678	1	*Clip, Sensitivity

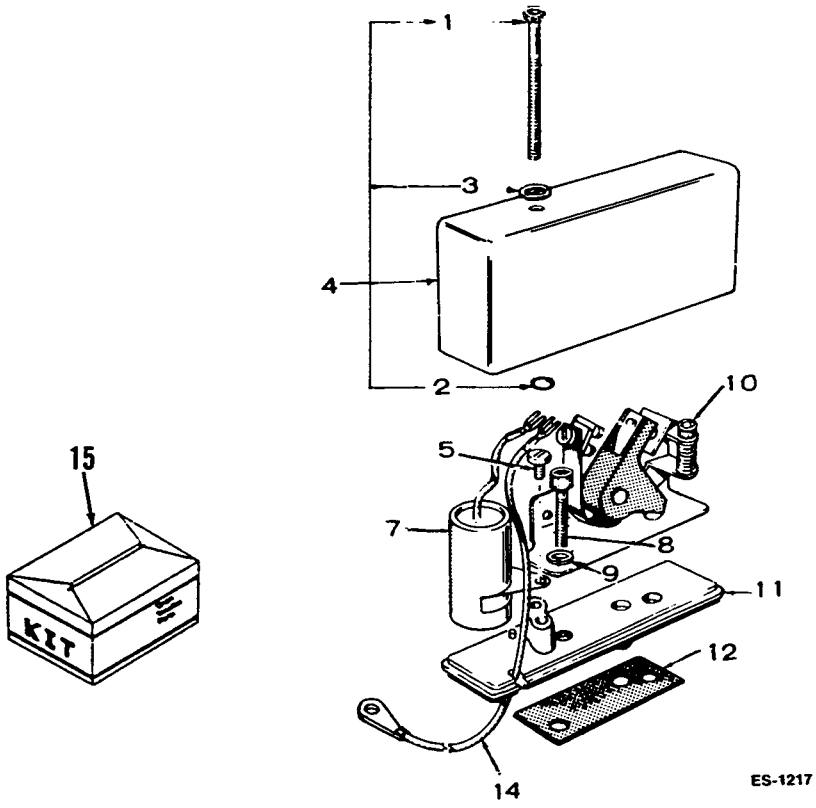
* - Parts Included in 103-0667 Gearcase Assembly.

Ignition System



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	166-0643	1	Coil, Ignition
2	166-0588	1	Clamp, Ignition Coil Mounting
3	167-1602	2	Lead, Spark Plug Electrical
4	167-0291	2	Plug, Spark
5	321-0017	1	Condenser, Ignition (.5 MFD)
6	821-0004	1	Screw, Cap - HWH (#10-32 x 5/16")
9	870-0131	1	Nut, Hex-Coil Bracket Mtg. and Condenser (#10-32)
10	160-1303	1	Box Assembly, Breaker-Complete (See Separate Group for Components)
11	160-0558	2	Nipple, Spark Plug Cable
12	850-2005	2	Washer, Flat (Special)
13	166-0554	2	Nut, Hex (Special)
14	160-1151	1	Plunger, Breaker Points

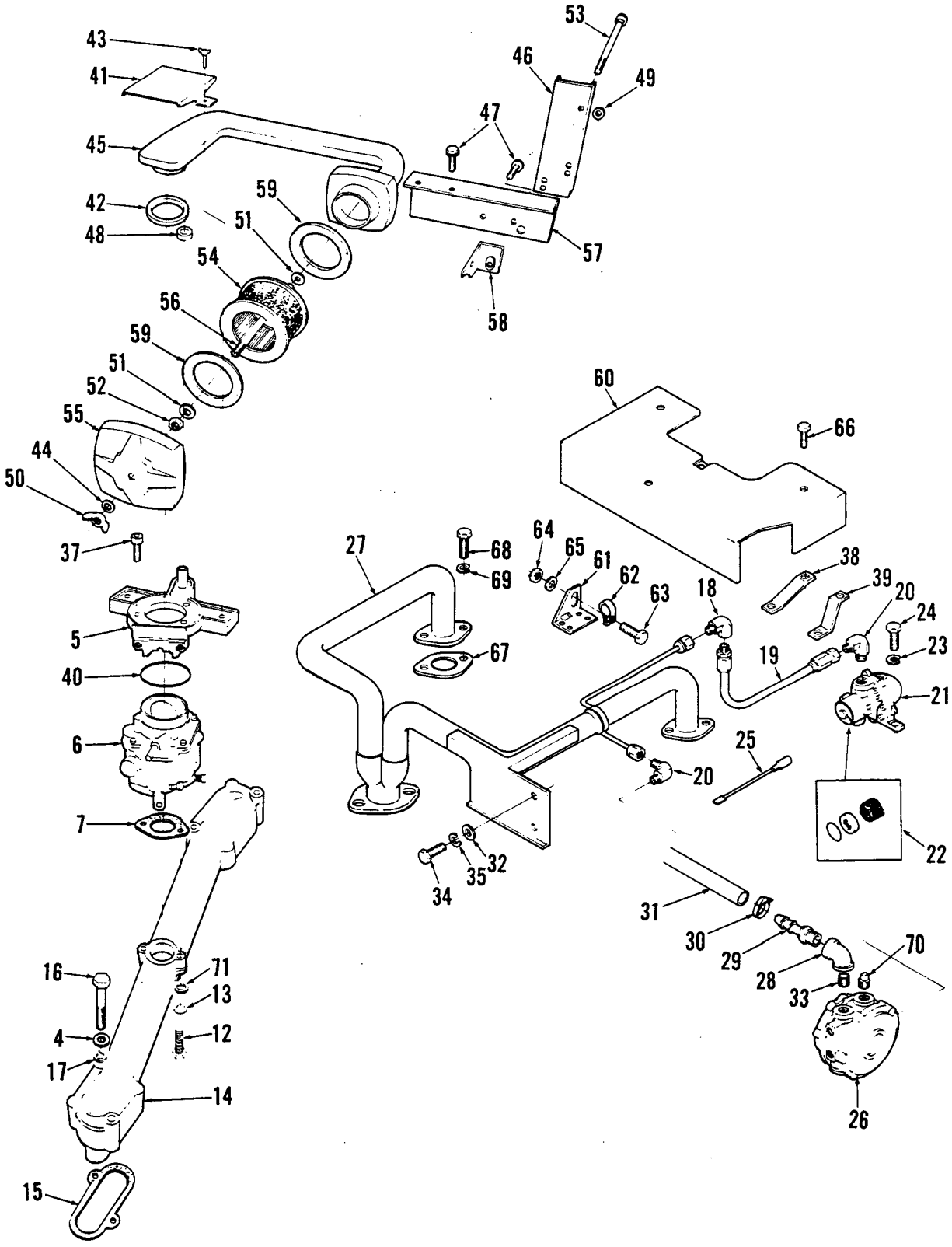
Breaker Box



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	160-1303	1	Breaker Box (Includes Parts Marked *)
1	802-0022	1	*Screw, Cap - Hex Socket (#10-24 x 1-1/2")
2	509-0065	1	*Retainer ("O" Ring)
3	526-0008	1	*Washer, Flat (13/64 ID x 7/16 OD x 1/32" Thk)
4	160-1285	1	*Cover, Breaker Box
5	815-0358	1	*Screw, Cap - Slotted (#8-32 x 5/16")
7	312-0246	1	*Condenser
8	802-0034	2	*Screw, Cap - Socket Head (1/4-20 x 3/4")
9	850-0040	2	*Washer, Lock (1/4")
10	160-1183	1	*Point Set, Breaker
11	160-1219	1	*Base, Breaker
12	160-1150	1	*Gasket, Breaker Box
14	336-2378	1	Lead, Breaker Box to Coil
15	160-1311	1	Tune Up Kit (Includes Points and Condenser)

* - Parts Included in 160-1303 Breaker Box.

Fuel System and Exhaust Manifold

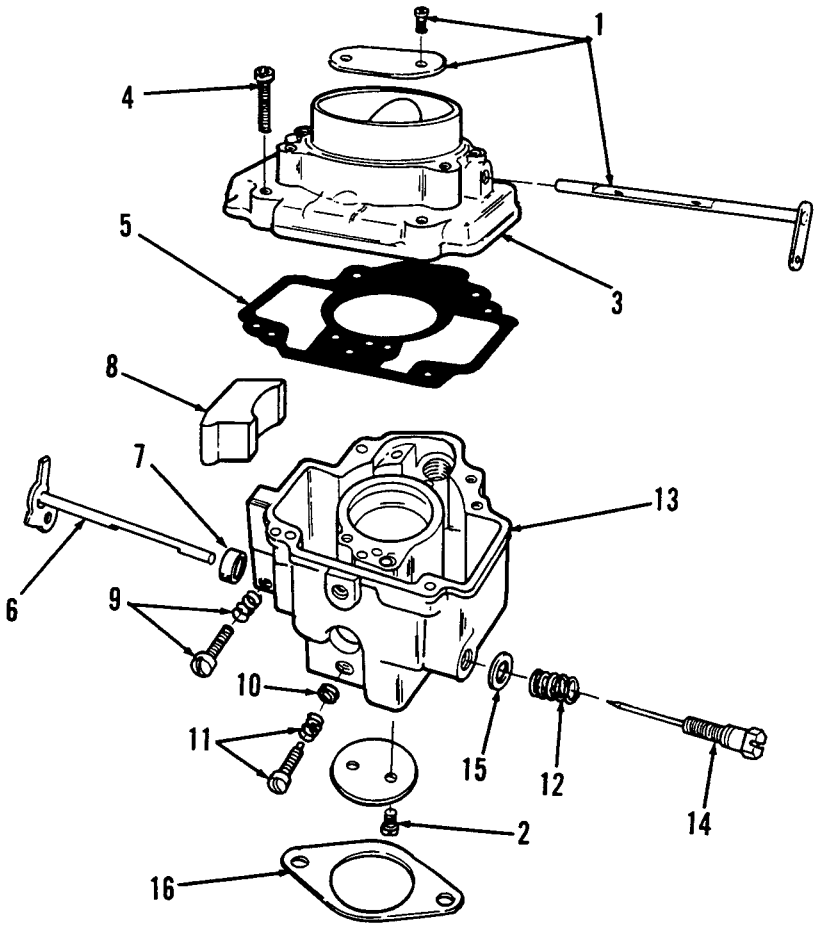


XFS 1521

Fuel System and Exhaust Manifold

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
4	526-0030	4	Washer, Flat (13/32"ID x 7/8"OD x 1/8"Thk)
5	140-1492	1	Adapter, Air Duct
6	146-0354	1	Carburetor, Complete (Includes Mounting Gasket) (See Separate Group for Components)
7	154-0733	1	Gasket, Carburetor to Adapter
12	800-0035	2	Screw, Cap - Hex Head (5/16-18 x 2-1/2")
13	850-0045	2	Washer, Lock - Spring (5/16")
14	154-2292	1	Manifold, Intake
15	154-1483	2	Gasket, Intake Manifold
16	800-0058	4	Screw, Cap - Hex Head (3/8-16 x 3")
17	800-0050	4	Washer, Lock - Spring (3/8")
18	502-0839	1	Elbow (90°)
19	501-0454	1	Line, Fuel
20	502-0838	2	Elbow (90°)
21	148-0868	1	Shutoff/Filter, Fuel
22	148-0874	1	Magnet and Filter Kit
23	850-0045	2	Washer, Lock - Spring (1/4")
24	800-0005	2	Screw, Cap - Hex Head, (1/4-20 x 3/4")
25	336-9679	1	Lead and Connector, Ground
26	148-0866	1	Regulator
27	154-2386	1	Manifold, Exhaust (Includes Fuel Line)
28	505-0047	1	Elbow, Reducing (90°)
29	502-0238	1	Connector, Hose
30	503-0183	2	Clamp, Hose
31	503-1191	1	Hose, Fuel
32	526-0021	2	Washer, Flat (17/64"ID x 3/4"OD x 1/16" Thk)
33	505-0100	1	Nipple, Close
34	800-0004	2	Screw, Cap - Hex Head (1/4-20 x 5/8")
35	850-0040	2	Washer, Lock - Spring (1/4")
37	804-0017	3	Screw, Cap - Socket Head (#10-32 x 1/2")
38	154-1969	1	Bracket, Heat Shield - Left
39	154-1968	1	Bracket, Heat Shield - Right
40	509-0145	1	Seal, "O" Ring
41	140-1520	1	Clamp, Air Duct
42	140-1502	1	Seal, Air Duct to Adapter
43	518-0390	2	Screw, Wing (1/4-20 x 3/4")
44	526-0021	1	Washer, Flat (17/64"ID x 3/4"OD x 1/16"Thk)
45	140-1503	1	Duct, Air Cleaner
46	140-1531	1	Bracket, Air Duct Support
47	821-0009	6	Screw, Cap - Hex Head Locking (1/4-20 x 3/8")
48	140-1521	1	Seal, Air Duct to Breather Port
49	870-0212	2	Nut, Hex - Locking (1/4-20)
50	865-0019	1	Nut, Wing (1/4-20)
51	526-0158	2	Washer, Flat (.261"ID x 1"Od x 1/8"Thk)
52	870-0212	1	Nut, Hex - Locking (1/4-20)
53	816-0070	1	Bolt, Carriage (1/4-20 x 6-1/2")
54	140-0495	1	Element, Air Cleaner
55	140-1504	1	Cover, Air Cleaner
56	140-1522	1	Spacer, Air Intake
57	140-1529	1	Bracket, Air Intake Duct
58	140-1528	1	Brace, Air Intake Duct
59	140-1533	2	Seal
60	154-2392	1	Shield, Heat - Exhaust Manifold
61	154-2396	1	Bracket, Fuel Line Mounting
62	503-1190	1	Clamp, Fuel Line
63	815-0176	1	Screw, Machine - Hex Head (#8-32 x 1/2")
64	870-0221	1	Nut, Hex W/ET (#8-32)
65	526-0003	1	Washer, Flat (11/64"ID x 3/8"OD x 1/32"Thk)
66	821-0010	2	Screw, Cap - HWH (1/4-20 x 1/2")
67	154-1482	2	Gasket, Exhaust
68	800-0512	4	Screw, Cap - Hex Head (5/16-18 x 1")
69	850-0045	4	Washer, Lock - Spring (5/16")
70	505-0110	1	Plug, Pipe - Square Head (3/8"NPT)
71	526-0022	1	Washer, Flat (21/64"ID x 9/16"OD x 1/16"Thk)

Carburetor Parts

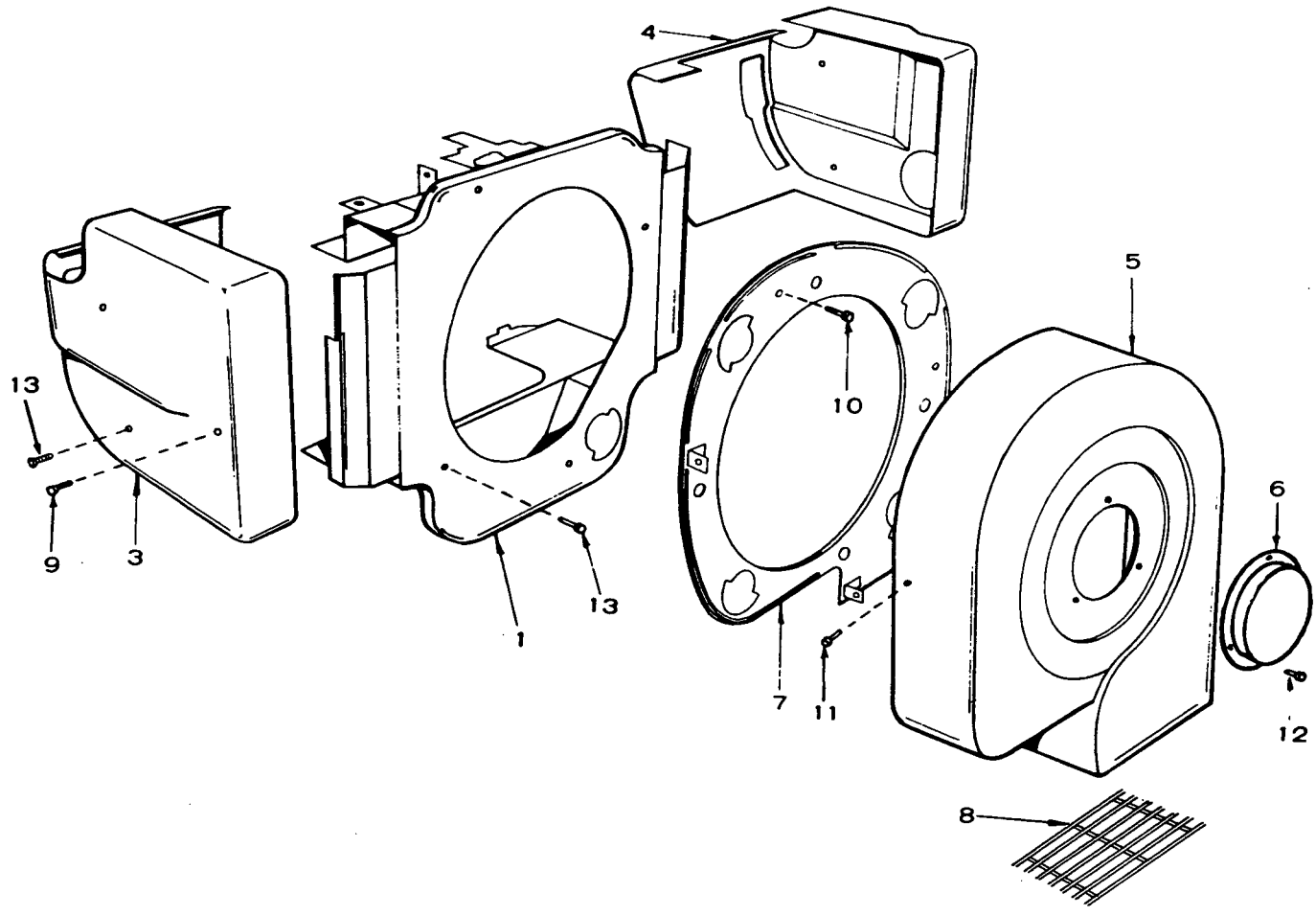


FS 1497

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	146-0354	1	Carburetor, Complete
1		1	Shaft, Choke (Not Sold Separately)
2	146-0142	2	*Screw, Throttle Valve
3		1	Intake, Air (Not Sold Separately)
4	146-0247	1	Screw, Body to Intake
5	146-0365	1	Gasket, Fuel Bowl
6	146-0267	1	. Shaft, Throttle (Package) (Includes Parts Marked *)
7	146-0178	1	*Seal, Throttle Shaft
8		2	Block, Filler (Not Sold Separately)
9	146-0261	1	Throttle Stop (Package)
10	146-0358	1	Seal, Idle Screw
11	146-0357	1	Screw, Idle
12	146-0363	1	Spring, Power Adjusting Screw
13		1	Body (Not Sold Separately)
14	146-0364	1	Screw, Power Adjusting
15	146-0359	1	Seal, Power Adjusting Screw
16	154-0733	1	Gasket, Carburetor Mounting

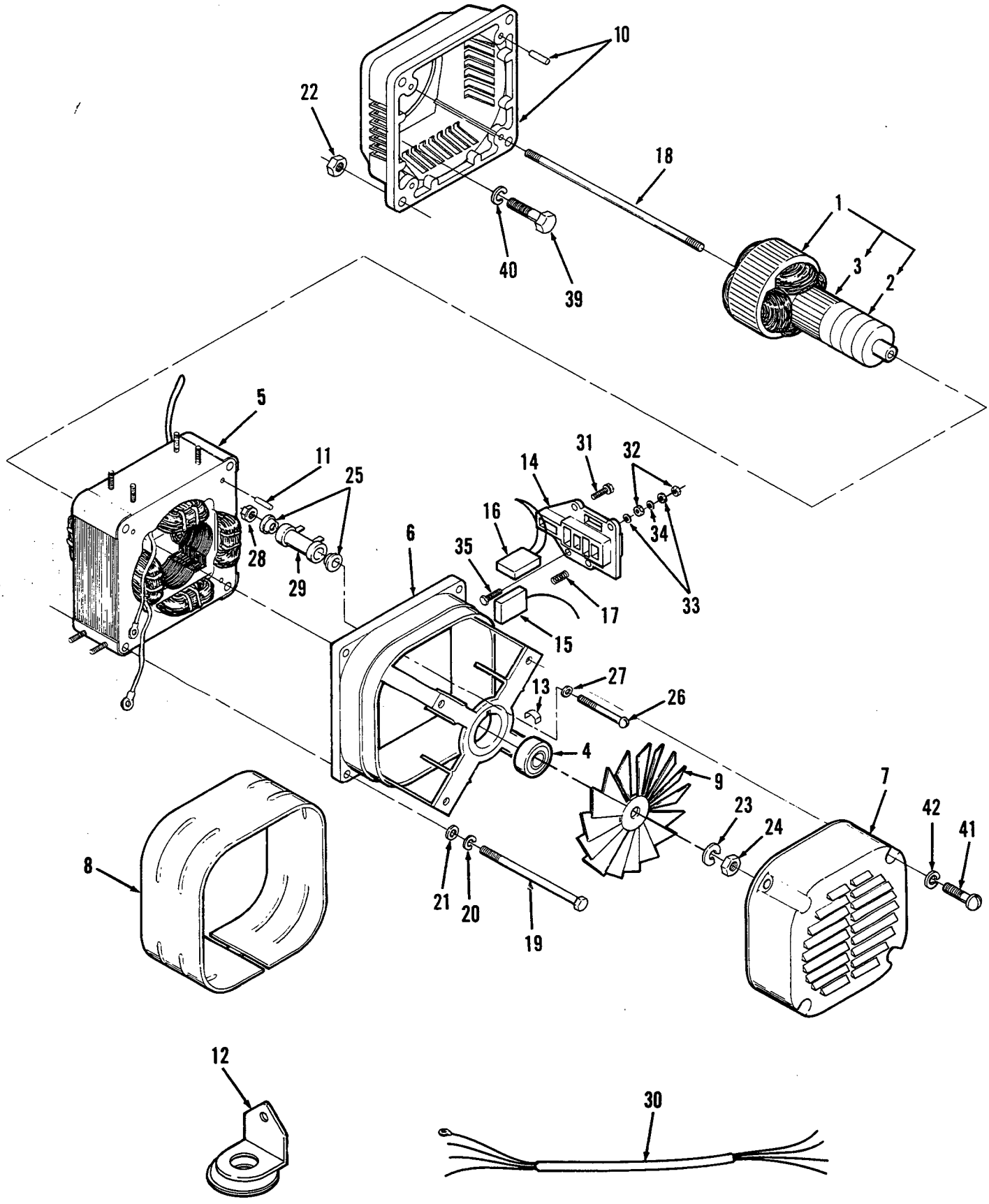
* - Parts Included in Package 146-0267

Air Housing



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	134-4095	1	Housing, Air
3	134-3617	1	Housing, Cylinder Air (Left Side)
4	134-3618	1	Housing, Cylinder Air (Right Side)
5	134-2749	1	Scroll, Air
6	134-3119	1	Cover, Scroll
7	134-2747	1	Backplate, Scroll
8	134-4316	1	Guard, Scroll
9	821-0010	2	Screw, Self-Locking - Hex Head - Cylinder Air Housing Mounting (1/4-20 x 1/2"Lg)
10	821-0010	4	Screw, Self-Locking - Hex Head - Scroll Backplate Mounting (1/4-20 x 1/2"Lg)
11	821-0010	5	Screw, Cap - HWH (1/4-20 x 3/8")
12	821-0009	3	Screw, Self-Locking - Hex Head - Scroll Cover Mounting (1/4-20 x 3/8"Lg)
13	815-0261	6	Screw, Tapping - Hex Head - Cylinder Air Housing Mounting (1/4-20 x 7/16"Lg)

Generator

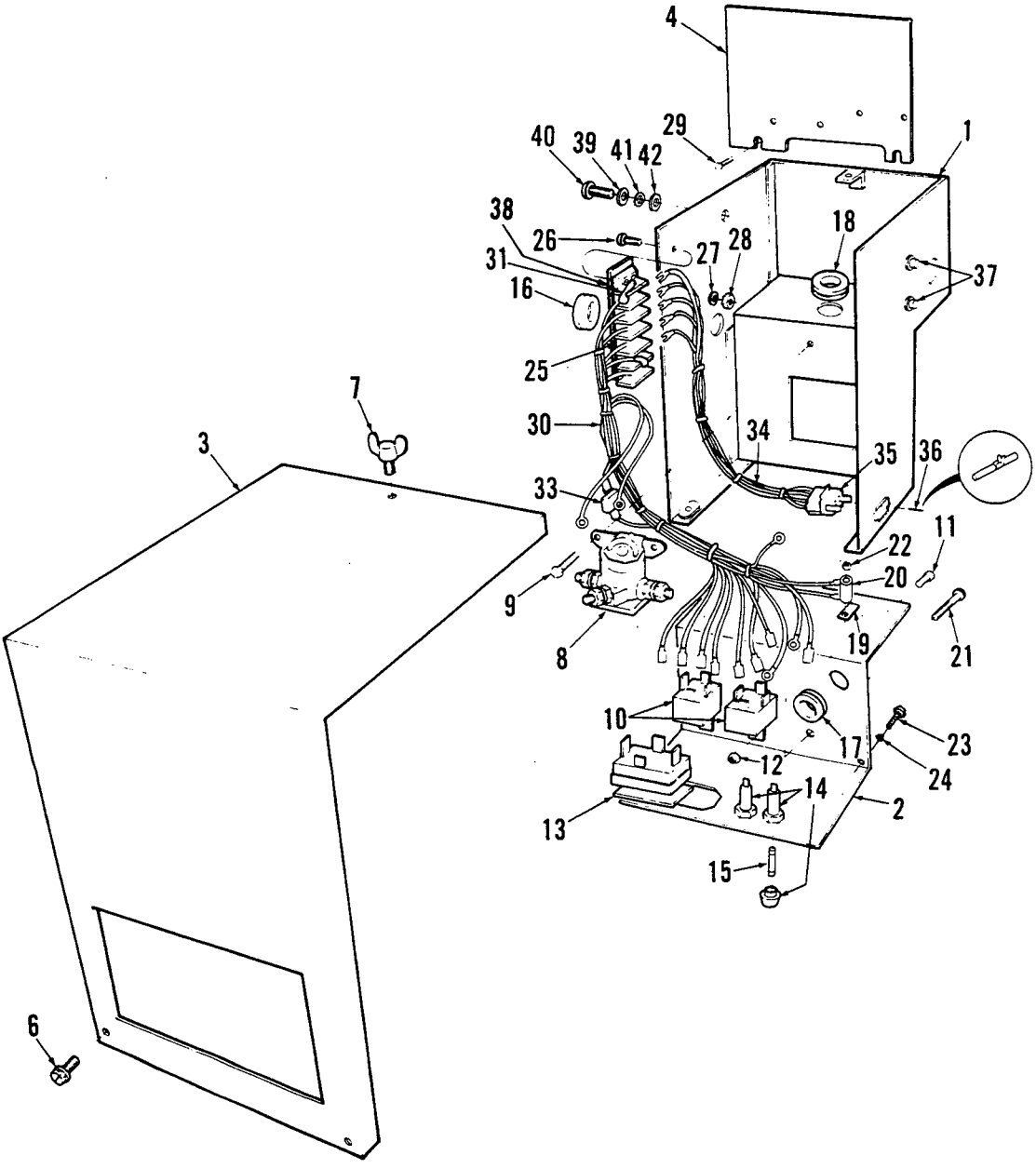

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Generator

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	201-2407	1	Armature Assembly, Generator (Includes Parts Marked*)
2	204-0110	1	*Collector Ring, Generator
3	203-0152	1	*Commutator, Generator
4	510-0047	1	*Bearing Ball
5	220-1816	1	Stator, Generator
6	211-0364	1	End Bell, Generator (Includes 4 alignment pins)
7	232-2107	1	Cover, Generator
8	234-0362	1	Wrapper, Generator
9	205-0090	1	Fan, Generator
10	231-0164	1	Adapter, Generator to Engine (Includes 4 alignment pins)
11	516-0196	8	Pin, Straight-Headless
12	402-0475	2	Support Generator
13	232-0596	1	Clip Retaining-Bearing
14	BLOCK BRUSH (Includes Parts Marked †)		
	212-1254	1	Bottom Position
	212-1258	1	Top Position
	212-1255	1	Left Side Position
	212-1259	1	Right Side Position
15	214-0095	4	Brush-DC
16	214-0096	4	Brush-AC
17	212-1232	8	Spring, Brush
18	520-0733	1	Stud
19	800-0044	4	Screw, Cap-Hex Head (5/16-18 x 7-1/2" Lg)
20	850-0045	3	Washer, Lock-Spring (5/16")
21	526-0115	4	Washer, Flat (11/32"ID x 11/16"OD x 1/16"Thk)
22	862-0015	4	Nut, Hex (5/16-18)
23	850-0055	1	Washer, Lock-Spring (7/16")
24	870-0203	1	Nut, Hex (7/16-20)
25	304-0014	1	Washer, Centering
26	812-0092	1	Screw, Machine - Round Head (#8-32 x 2-3/4" Lg)
27	853-0005	1	Washer, Lock-(#8)w/ET
28	870-0221	1	Nut, Hex (#8-32) w/ET
29	353-0057	1	Resistor, Fixed (3.4 Ohm, 25 Watt)
30	338-1099	1	Harness Wiring
31	815-0359	15	Screw, Tapping - Hex Head (#10-32 x 7/8" Lg)
32	871-0010	8	†Nut, Hex-Brass (#10-32)
33	853-0008	8	†Washer, Lock - External (#10)
34	526-0049	8	†Washer, Flat-Brass (.200"ID x 7/16"OD x 1/32"Thk)
35	815-0341	4	†Screw, Machine-Hex Head Brass(#10-32 x 1" Lg)
39	800-0050	4	Screw, Cap-Hex Head (3/8-16x1-1/4" Lg)
40	850-0050	4	Washer, Lock-Spring (3/8")
41	812-0156	2	Screw, Machine-Round Head (1/4-20 x 1-1/4"Lg)
42	850-0040	2	Washer, Lock Spring (1/4")

*-Parts Included in Armature Assembly
†-Parts Included in Generator Brush Blocks.

Control



XES 1431

Control

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	301-4446	1	Box, Control
2	301-4442	1	Panel, Control
3	301-8895	1	Cover, Control (Includes AC Schematic)
4	301-4441	1	Plate, Control
6	815-0350	1	Screw, Tapping - Slotted HWH (#10-32 x 3/8")
7	518-0056	1	Screw, Wing (#10-32 x 1/2")
8	307-1617	1	Relay, Start Solenoid
9	821-0009	2	Screw, Cap - HWH (1/4-20 x 3/8")
10	307-1575	2	°Relay, Ignition (Crank Ignition and Run Ignition)
11	815-0340	1	Screw, Machine - Round Head (#10-32 x 3/8")
12	870-0131	3	Nut, Hex with ET (#10-32)
13	308-0383	1	Switch, Start-Stop
14	321-0175	2	Holder, Fuse
15	321-0174	2	Fuse (5 Ampere)
16	508-0208	1	Bushing, Insulating - Nylon (3/4" Hole)
17	331-0088	1	Bushing, Insulating
18	508-0191	1	Bushing, Insulating - Nylon (7/8" Hole)
19	304-0580	1	Insulator, Resistor Mounting
20	RESISTOR, FIXED		
	352-0160	1	120 Ohm, 5 Watt
	352-0161	1	°100 Ohm, 5 Watt
	304-0431	1	150 Ohm, 5 Watt
21	812-0087	1	Screw, Machine - Round Head (#8-32 x 1-1/2")
22	870-0221	2	Nut, Hex with ET (#8-32)
23	821-0004	5	Screw, Cap - Hex Head (#10-32 x 5/16")
24	856-0003	2	Washer, Lock - EIT (#10)
25	332-0254	1	Block, Terminal - 4 Place
26	812-0066	2	Screw, Machine - Round Head (#6-32 x 3/4")
27	853-0003	2	Washer, Lock - ET (#6)
28	860-0005	2	Nut, Hex (#6-32)
29	821-0009	4	Screw, Cap - HWH (1/4-20 x 3/8")
30	338-1265	1	Harness, Wiring - Control
31	323-1088	3	Nut, Wire
33	357-0030	1	°Rectifier, Diode
34	338-1078	1	Harness, Wiring (Includes Parts Marked Δ)
35	323-0440	1	°ΔHousing, Connector Pin
36	323-0488	5	°ΔPin, Connector-Female
37	BREAKER, CIRCUIT		
	320-0544	2	35 Amp
	320-0692	1	20 Amp
38	332-2099	1	Strip, Terminal Block Marker
39	508-0015	1	Washer, Fibre
40	815-0238	1	Screw, Machine - Round Head with ET (#8-32 x 7/16")
41	853-0005	1	Washer, Lock - ET (#8)
42	526-0048	1	Washer, Flat - Brass (11/64"ID x 3/8"OD x 1/32" THK)

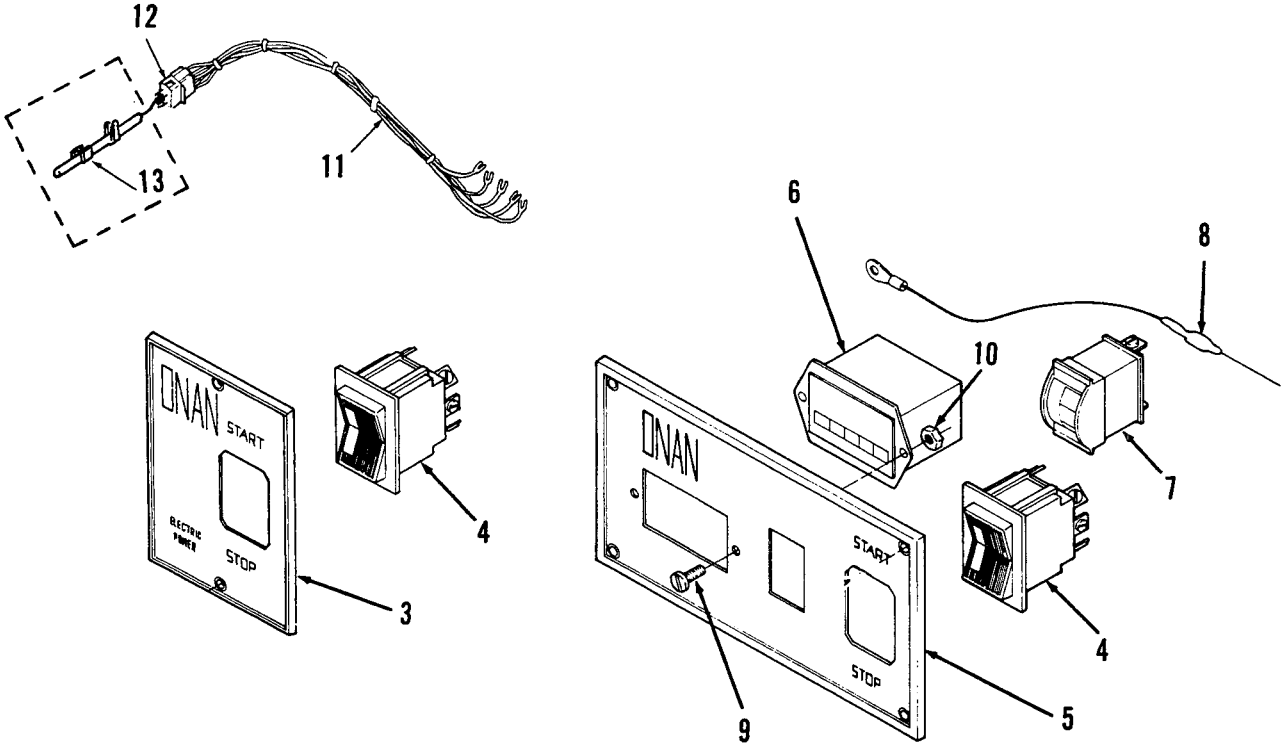
° - Parts Included in 338-1265 Wiring Harness

Δ - Parts Included in 338-1078 Wiring Harness

Paint

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	525-0305	1	Paint, Enamel Touch-up (Non-Metallic Green) - 13 oz. Pressurized Can
	525-0137	1	Paint, Enamel Touch-up (Metallic Green) - 13 oz. Pressurized Can

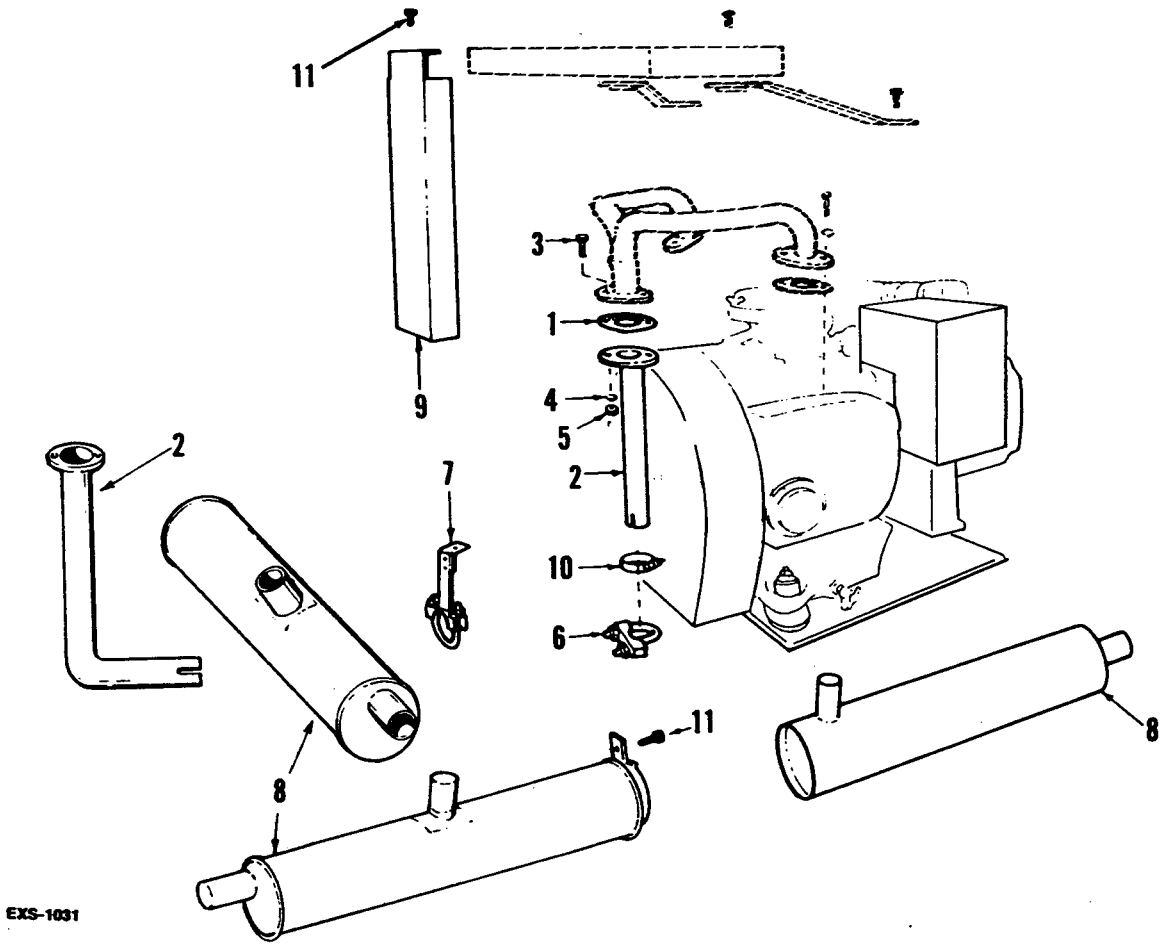
Remote Start Control



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	300-0985	1	Control Package-Standard Remote Starting (Includes Parts Marked *)
	300-0986	1	Control Package-Deluxe Remote Starting (Includes Parts Marked †)
3	301-3566	1	*Panel Control
4	308-0341	1	*†Switch, Rocker
5	301-3606	1	†Panel, Control
6	302-0885	1	†Meter, Time Totalizing
7	302-0888	1	†Meter, Battery Condition
8	359-0034	1	†Diode
9	815-0385	2	†Screw, Machine - Round Head (#6-32 x 1/2" lg)
10	860-0005	2	†Nut, Hex, Head (#6-32)
11	HARNESS, WIRING — REMOTE (Includes Parts Marked %)		
	338-1082	1	6 Inches Long
	338-1080	1	10 Ft.
	338-1081	1	30 Ft.
12	323-0400	1	%Housing, Connector Pin
13	323-0500	5	%Pin, Connector-Male

* - Parts Included in 300-0985 Control Assembly.
† - Parts Included in 300-0986 Deluxe Control Assembly.
% - Parts Included in Remote Wiring Harness.

Exhaust System
(UL Listed and CSA Certified)



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	154-2061	1	Gasket, Exhaust Tube
2	TUBE, EXHAUST		
	154-2167	1	15-1/2" Long (Straight)
	154-2143	1	12-1/2" Long (Straight)
	154-2226	2	90° Bend-W/Attached Clamp (4" Long)
	154-2554	1	90° Bend-W/Attached Clamp (18" Long)
3	800-0030	2	Screw, Cap-Hex Head (5/16-18 x 1-1/4" lg)
4	850-0045	2	Washer, Lock - Spring (5/16")
5	862-0015	2	Nut, Hex (5/16-18)
6	155-1239	1	Clamp, Muffler
7	155-1234	1	Bracket and Clamp, Muffler
8	MUFFLER, SPARK ARRESTOR		
	155-1258	1	End Inlet
	155-1520	1	Center Inlet (Used with Straight Exhaust Tube)
	155-1910	1	Center Inlet (Used with 90° Bend Exhaust Tube)
9	154-2146	1	Shield, Heat
10	503-0107	1	Clamp, Shield to Exhaust Tube
11	821-0010	2	Screw, Cap-Locking Head (1/4-20 x 1/2")